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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,129	05/29/2001	Joseph J. Ervin	P6452	6472

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EXAMINER

HUYNH, KIM T

ART UNIT	PAPER NUMBER
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2112

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/867,129

Applicant(s)

ERVIN, JOSEPH J.

Examiner

Kim T. Huynh

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-28 and 30-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-28 and 30-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-11, 13, 17-28, 30, 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Porterfield (US Patent 6,542,953)

As per claim 1, 18, 35-36, Porterfield discloses a method for configuring a bus system having a plurality of bus segments with bus master devices and slave devices connected thereto, the bus segments connected by bus bridges and arranged in a hierarchy with levels(col.5, lines 53-62), each bus bridge having a bridge ID, a plurality of internal registers and an address bitmap for controlling information flow through the bridge wherein each bridge responds to configuration commands sent to its bridge ID, the method comprising: (col.2, lines 30-60)

- Selecting an initial bridge ID value; (col.3, lines 37-45, ie, stored configuration data for its respectively bridge to host bus)
- Initially setting the bridge ID of all bridges to the initial bridge ID value so that all bridges start with the same bridge ID; (col.3, lines 37-45, ie, stored

configuration data for its respectively bridge initially with the same bridge ID before couple to host bus)

- Configuring bridges on a hierarchical level so that only one bridge at a time responds to a configuration command sent to the initial bridge ID value;(col.6, lines 12-43)
- Repeatedly sending configuration commands and data to the initial bridge ID value; (col.2, lines 47-60)
- Assigning a unique bridge ID different from the initial bridge ID value to each bridge that responds to the configuration commands and data; and (col.3, lines 37-67, ie the address assigned to respective bridges include a memory address range assigned to the system memory is different from the initial setting before bridge couple to the system), (col.2, lines 47-60)
- Entering information into internal registers and address bitmap of each bridge that responds to the configuration commands and data to control the flow of information between bus segments. (col.2, lines 47-60)

As per claims 2, 19, Porterfield discloses wherein the bus topology is a tree configuration and performing a recursive procedure that configures each branch of the tree. (col.2, lines 30-60)

As per claims 3, 20, Porterfield discloses wherein the bus system has an address space and wherein the method further comprises probing the address space for slave devices. (col.4, lines 58-67)

As per claims 4, 21, Porterfield discloses checking for a duplicate slave address when a slave device located. (col.1, lines 35-45),

As per claims 5, 22, Porterfield discloses inserting a slave address of a located slave device into a global address bitmap if the slave address is not a duplicate; and inserting the slave address into a tunnel list if the slave address is a duplicate. (col.4, lines 18-46), (col.6, line 60-col.7, line 10)

As per claims 6, 23, Porterfield discloses the method further comprises repeatedly probing the address space for upstream bridges when no slave device is located. (col.4, lines 18-46)

As per claims 7, 24, Porterfield discloses wherein assigning a bridge ID value to each located upstream bridge. (col.3, lines 38-67)

As per claims 8-10, 25-27, Porterfield discloses repeatedly probing for downstream bridges when no further upstream bridges are located. (col.4, lines 4-67)

As per claims 11, 28, Porterfield discloses method further comprising:

- Walking the bus system to discover upstream bridges; and (col.4, lines 4-67)
- Entering information into internal registers and address bitmap of each discovered upstream bridge to control the flow of information between bus segments. (col.4, lines 4-67)

As per claims 13, 30 Porterfield discloses wherein step comprises connecting all bridges on the same hierarchical level so that only one bridge at a time responds to the same predetermined bridge ID. (col.4, lines 4-67)

As per claims 17, 34, Porterfield discloses the method further comprising providing additional information to each bridge to enable the bridge to operate with a deterministic arbitration protocol. (col.3, lines 37-67)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 14-15, 31-32, are rejected under 35 U.S.C. 103(a) as being unpatentable over Porterfield (US Patent 6,542,953) in view of Story et al. (US Patent 6,260,092)

The modified Porterfield discloses all the limitations as above except wherein all bridges on the same hierarchical level are connected in a daisy chain configuration wherein enables the next bridge to respond to the same predetermined bridge. However, Story discloses bridges are connected in a daisy chain. The output of each interface inputs the input of the next interface in the chain and so forth. (col.7, lines 45-55)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Story's teaching into Porterfield's

method so as to provide devices and methods for reducing interconnect signal line count by using a serially connected bus and to improve the operation of so that the bandwidth can be improved to make this serial connection function as a practical alternative to existing parallel busses. (col.1, lines 49-57)

5. Claims 16, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Porterfield (US Patent 6,542,953) in view of Young et al. (US Patent 5,771,387) and further in view of Pecone et al. (US Patent 6,044,207)

The modified Porterfield discloses all the limitations as above except wherein two unidirectional bridges are connected in parallel. However, Pecone discloses PCI bridges are unidirectional (col.2, lines 47-50).

Furthermore, the modified Porterfield discloses all the limitations as above except two unidirectional bridges are connecting in parallel. However, Young discloses PCI-PCI bridges successively in parallel. (col.4, lines 19-20).

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Pecone and Young's teaching into Porterfield's method so as to provide highly flexible and better performance for the system.

Response to Amendment

6. Applicant's amendment filed on 4/4/05 have been fully considered but does not place the application in condition for allowance.

a. Applicant argues that Cepulis and Porterfield do not teach or suggest initially setting the bridge ID of all bridges to the initial bridge ID value so that all the bridges

start with the same bridge ID and assigning a unique bridge ID different from the initial bridge ID value to each bridge that responds to the configuration commands and data, the configuring bridges responds to a configuration command sent to the initial bridge ID value. Examiner respectfully disagrees. As Porterfield notes at (col.3, lines 37-67) discloses stored configuration data for its respectively bridge initially with the same bridge ID which means all bridge ID before couple to the host has same bridge ID(initially setting). And furthermore, at (col.2, lines 47-60, the address assigned to respective bridges include a memory address range assigned to the system memory is different from the initial setting before bridge couple to the system which means when coupled to the host bus each of the configuration registers stores configuration data for its respective bridges, the I/O address ranges assigned to the respective bridges by the processor(assigned bridges with ID which different from initially setting). The processor transmits on the host bus a configuration command which will responds by the assigned bridges (configuring bridges responds to a configuration command). Thus, the prior art teaches the invention as claimed and the amended claims do not distinguish over the prior art as applied.

b. Applicant argues that Story does not discloses all the bridges on the same hierarchical level are connected in a daisy chain so that only one bridge at a time responds to the initial bridge ID value. Examiner respectfully disagrees. As Story notes at (col.7, lines 45-66) discloses bridges are connected in a daisy chain. The output of each interface inputs the input of the next interface in the chain and so forth. This allows the input and output data representations of each bridges. All the bridges when

connected in a daisy chain have the same hierarchical level and one bridge responds to the matching bridge ID in the chain. It is clear that Story is an analogous art and it reads on the breadth of the claimed languages therefore it is properly stated in the rejection of record.

Conclusion

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9:00AM- 6:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached at (571)272-3632 or via e-mail addressed to [mark.Rinehart@uspto.gov].*

The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications. Any inquiry of a general

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nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.

Kim Huynh

June 7, 2005

A handwritten signature in black ink, appearing to read 'Tim Vo', with a long, sweeping horizontal stroke extending to the left.

TIM VO
PRIMARY EXAMINER